



SUGHRUE MION, PLLC

January 23, 2002

JC07 Rec'd PCT/PTO 2 3 JAN 2002 10/031599

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BOX PCTCommissioner for Patents
Washington, D.C. 20231PCT/FR00/02151
-filed July 26, 2000

Re: Application of Ludovic PETIT and Laurent ARGHYRIS
A FLUID DISPENSER DEVICE HAVING A CLOSURE SYSTEM
Assignee: VALOIS S.A.
Our Ref: Q68159

Dear Sir:

The following documents and fees are submitted herewith in connection with the above application for the purpose of entering the National stage under 35 U.S.C. § 371 and in accordance with Chapter H of the Patent Cooperation Treaty:

- ☒ an English translation of the International Application.
- ☒ one (1) sheet of drawings.
- ☒ an English translation of Article 34 amendments (annexes to the IPER).
- ☒ a Preliminary Amendment

The Declaration and Power of Attorney, Assignment, will be submitted at a later date.

It is assumed that copies of the International Application, the International Search Report, the International Preliminary Examination Report, and any Articles 19 and 34 amendments as required by § 371(c) will be supplied directly by the International Bureau, but if further copies are needed, the undersigned can easily provide them upon request.

The Government filing fee, after consideration of the Preliminary Amendment is calculated as follows:

Total claims	5	-	20	=		x	\$18.00	=	\$0.00
Independent claims	1	-	3	=		x	\$84.00	=	\$0.00
Base Fee									\$890.00

TOTAL FEE\$890.00

A check for the statutory filing fee of \$890.00 is attached. You are also directed and authorized to charge or credit any difference or overpayment to Deposit Account No. 19-4880. The Commissioner is hereby authorized to charge any fees under 37 C.F.R. §§ 1.16, 1.17 and 1.492 which may be required during the entire pendency of the application to Deposit Account No. 19-4880. A duplicate copy of this transmittal letter is attached.

Priority is claimed from:

CountryApplication NoFiling Date

France

99/09798

July 28, 1999

Respectfully submitted,

Robert J. Seas, Jr.
Registration No. 21,092

RJS/rwl

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Ludovic PETIT, et al.

Appln. No.: PCT/FR00/02151

Confirmation No.: Not Yet Assigned

Group Art Unit: Not Yet Assigned

Filed: January 23, 2002

Examiner: [case_examiner]

For: A FLUID DISPENSER DEVICE HAVING A CLOSURE SYSTEM

PRELIMINARY AMENDMENT

Commissioner for Patents
Washington, D.C. 20231

Sir:

Prior to examination, please amend the above-identified application as follows:

IN THE CLAIMS:

Please enter the following amended claims:

3/ A device according to claim 1, in which the dispensing head (30) is mounted to move axially and the dispensing orifice (31) is directed radially, said closure system (40) being implemented in the form of a hollow sleeve (45) disposed around said dispensing head (30), said hollow sleeve (45) having, on one side, the opening (42) and the closure element (41) disposed above said opening (42), and, on the other side, a cutout through which the dispensing head (30) projects so that it can be actuated by the user.

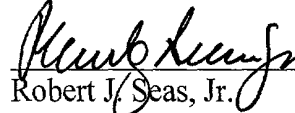
4/ A device according to claim 1, in which, while the dispensing head (30) is returning from its dispensing position to its rest position, after the dispensing member (20) has been actuated, the closure element (41) slides snugly over the zone situated around the dispensing orifice (31), so as to remove any trace of fluid at said dispensing orifice (31) totally.

5/ A device according to claim 1, in which said closure system (40) is snap-fastened to the neck of the reservoir (10).

REMARKS

Entry and consideration of this Amendment is respectfully requested.

Respectfully submitted,



Robert J. Seas, Jr.
Registration No. 21,092

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Date: January 23, 2002

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APPENDIX**VERSION WITH MARKINGS TO SHOW CHANGES MADE****IN THE CLAIMS:**

The claims are amended as follows:

3/ A device according to claim 1-~~or~~2, in which the dispensing head (30) is mounted to move axially and the dispensing orifice (31) is directed radially, said closure system (40) being implemented in the form of a hollow sleeve (45) disposed around said dispensing head (30), said hollow sleeve (45) having, on one side, the opening (42) and the closure element (41) disposed above said opening (42), and, on the other side, a cutout through which the dispensing head (30) projects so that it can be actuated by the user.

4/ A device according to claim 1 ~~any preceding claim~~, in which, while the dispensing head (30) is returning from its dispensing position to its rest position, after the dispensing member (20) has been actuated, the closure element (41) slides snugly over the zone situated around the dispensing orifice (31), so as to remove any trace of fluid at said dispensing orifice (31) totally.

5/ A device according to claim 1 ~~any preceding claim~~, in which said closure system (40) is snap-fastened to the neck of the reservoir (10).

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1/pk

A FLUID DISPENSER DEVICE HAVING A CLOSURE SYSTEM

The present invention relates to a fluid dispenser device, and more particularly to a fluid dispenser device including a closure system.

5 It is well known from the state of the art that closure means can be used to close off the dispensing orifice of a fluid dispenser device in leaktight manner between successive occasions on which the device is actuated. Two different types of closure means are
10 generally used. Thus firstly, Document FR-2 750 406 discloses a removable cap provided with a closure element, said cap being removed and put back in place by the user every time the dispenser is used, respectively
15 of closure means suffers from the drawback that closure is not independent of the user, and therefore that if ever the user forgets to put the closure cap back in place after the device has been actuated, then closure is not achieved. In addition, that system requires the user
20 to perform additional manipulation, namely removing the closure cap and then putting it back in place, which can be a drawback, in particular for elderly people, the disabled, or children. Secondly, it is also known that closure means can be disposed in the dispensing head,
25 downstream from the dispensing orifice. Such closure systems do not suffer from the preceding drawback because they are automatic, and therefore independent of the user, but they do suffer from the drawback, in particular in spray devices, of modifying the spray profile, and
30 thus of preventing the fluid from being sprayed in proper and exactly reproducible manner each time the device is actuated. Furthermore, because they are positioned downstream from the dispensing orifice, such closure systems do not avoid the problem of a small quantity of
35 fluid remaining on the zone situated around the dispensing orifice, outside it, after the device has been actuated. Such small quantities of fluid can then dry

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and block the dispensing orifice totally or partially, or can oxidize and be dispensed when the device is next actuated.

5 An object of the present invention is to provide a fluid dispenser device including a closure system that does not reproduce the above-mentioned drawbacks.

10 An object of the present invention is thus to provide a fluid dispenser device including a closure system in which closure is achieved independently of the user.

Another object of the present invention is to provide such a fluid dispenser device that guarantees proper and reproducible spraying each time it is actuated.

15 Yet another object of the present invention is to provide such a fluid dispenser device that prevents any risk of the dispensing orifice becoming blocked between successive occasions on which the device is actuated.

20 A further object of the present invention is to provide such a fluid dispenser device including a closure system that prevents any oxidation of the fluid around said dispensing orifice after the dispenser is actuated, every time it is actuated.

25 A further object of the present invention is to provide such a fluid dispenser device including a closure system that is simple and inexpensive to make, and that is easily adaptable to existing dispensing heads.

30 The present invention thus provides a fluid dispenser device for dispensing a fluid, the fluid dispenser device comprising a fluid reservoir, a dispensing member, such as a pump, mounted on said reservoir, and a dispensing head provided with a dispensing orifice and mounted on said dispensing member to move between a rest position and a dispensing
35 position, the fluid dispenser device further comprising a closure system fixed to said reservoir and comprising a closure element suitable for closing off the dispensing

orifice from the outside when the dispensing head is in the rest position, said closure system further comprising passageway means, such as an opening, co-operating with said dispensing orifice when the dispensing head is in the dispensing position, and making it possible for fluid to be expelled through said dispensing orifice.

Advantageously, said closure system is formed such as to make it possible for the dispensing head to be actuated manually by a user.

Advantageously, said dispensing head is mounted to move axially and the dispensing orifice is directed radially, said closure system being implemented in the form of a hollow sleeve disposed around said dispensing head, said hollow sleeve having, on one side, the opening and the closure element disposed above said opening, and, on the other side, a cutout through which the dispensing head projects so that it can be actuated by the user.

Preferably, said dispensing member has an initial dead stroke, actuating of said dispensing member starting only after the dispensing head has travelled over said dead stroke, when the dispensing orifice co-operates with said passageway means in said closure system.

Preferably, while the dispensing head is returning from its dispensing position to its rest position, after the dispensing member has been actuated, the closure element slides snugly over the zone situated around the dispensing orifice, so as to remove any trace of fluid at said dispensing orifice totally.

Advantageously, said closure system is snap-fastened to the neck of the reservoir.

Advantageously, said dispensing head includes a spray nozzle insert for limiting the dead volume, and a spray profile for ensuring that the product is sprayed when the dispensing member is actuated.

The characteristics and advantages of the present invention appear more clearly from the following detailed description of a particular embodiment of it, given by

way of non-limiting example and with reference to the accompanying drawing, in which the sole figure is a diagrammatic section view of a fluid dispenser device of the present invention, in the rest position.

5 The dispenser device includes a reservoir 10 on which a dispenser member 20, such as a precompression pump in the example shown in the figure, is mounted. The pump 20 may be fixed to the reservoir 10 by any means, and in particular by a screw-on, snap-fastenable, or
10 crimpable fixing ring 25. A dispensing head 30 is mounted on said pump 20 to actuate it, said head 30 being provided with a dispensing orifice 31, and being mounted to move axially between a rest position and a dispensing position. Advantageously, the dispensing head 30 may be
15 moved from its rest position to its dispensing position by a finger of a user exerting pressure on its top surface, and it may be returned from its dispensing position by the return spring 22 of the pump 20.

20 In the invention, the fluid dispenser device further includes a closure system 40 fixed to the reservoir 10. In the example shown, the closure system 40 is snap-fastenable to the neck of the reservoir 10 around the fixing ring 25, but other means for fixing the closure system 40 to the reservoir 10 may be imagined. In the
25 example shown in the figure, the closure system 40 comprises a hollow sleeve 45 which incorporates a closure element 41 co-operating with the dispensing orifice 31 in the dispensing head 30 when said head is in the rest position, and an opening 42 which co-operates with the
30 dispensing orifice 31 when the dispensing head 30 is in the dispensing position to enable fluid to be expelled through said dispensing orifice 31 and through said opening 42. In the embodiment shown in the figure, the dispensing orifice 31 is directed radially in the
35 dispensing head 30, which can be moved axially between its rest position and its dispensing position. The closure element 41 is thus disposed on the inside side

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wall of the hollow sleeve 45, above the opening 42. In which case, the pump 20 preferably has an initial dead stroke so that fluid expulsion starts only after said dead stroke, when the dispensing orifice 31 is situated facing the opening 42. To facilitate actuating of the dispenser device, the closure system 40, and in particular the hollow sleeve 45, is provided with a cutout 48 on the side opposite from the side having the closure element 41 and the window 42, so that the dispensing head 30 projects through said cutout 48, thereby making it easy for the user to press on said head 30 from the outside. Naturally, the cutout 48 in the sleeve 45 may be of any shape.

The closure element 41 may be of any suitable shape and may be made of any suitable material. For example, it may be in the form of a stopper wad. It may also contain a bacteriostatic and/or oligodynamic material. The opening 42 is advantageously in the form of a window provided in the side wall of the hollow sleeve 45 and whose dimensions are suitable for avoiding obstructing expulsion of the fluid.

The closure element 41 removes any trace of fluid in this zone that remains after the dispenser has been actuated. Thus, there is no risk of even a very small quantity of fluid oxidizing after the dispenser has been actuated, and then being dispensed when the dispenser is next actuated. Similarly, there is no risk of even a very quantity of fluid drying and totally or partially blocking the dispensing orifice, which could degrade the quality of the spraying. The closure element thus advantageously performs a cleaning function whereby it cleans the dispensing orifice 31. Advantageously, while the dispensing head 30 is returning from its dispensing position to its rest position, the closure element 41 slides snugly over the outside surface of the zone situated around the dispensing orifice 31 of the

dispensing head 30. This further improves said cleaning function.

Preferably, the present invention is applied to a spray device having a spray nozzle insert for limiting the dead volume, and a spray profile for guaranteeing proper spraying of the fluid each time the dispenser is actuated. The present invention thus makes it possible to guarantee absolutely leaktight closure, independently of the user, and without modifying in any way the spray profile or therefore the proper shape of the spray delivered when the dispenser is actuated.

The present invention is described with reference to a particular embodiment in which the dispensing orifice 31 is directed radially, and the dispensing head 30 is mounted to move axially. However, it is possible to apply the present invention to any other type of dispensing head, e.g. a pivotally-mounted dispensing head, and to a dispensing orifice directed otherwise, naturally provided that the dispensing head moves relative to the closure system fixed to the reservoir, to enable the dispensing orifice to be moved between the closure element and the opening in the closure system.

Other modifications may also be imagined without going beyond the ambit of the present invention, whose scope is defined only by the accompanying claims. For example, the dispensing member may be of any type, the precompression pump shown in the figure being merely an advantageous embodiment.

CLAIMS

1/ A fluid spray device for spraying a fluid, the fluid spray device comprising a fluid reservoir (10), a dispensing member (20), such as a pump, mounted on said reservoir (10), and a dispensing head (30) provided with a dispensing orifice (31) and mounted on said dispensing member (20) to move between a rest position and a dispensing position, said dispensing head (30) including a spray nozzle insert for limiting the dead volume, and a spray profile for ensuring that the product is sprayed when the dispensing member (20) is actuated, the device further comprising a closure system (40) fixed to said reservoir (10) and comprising a closure element (41) suitable for closing off the dispensing orifice (31) from the outside when the dispensing head (30) is in the rest position, said closure system (40) further comprising passageway means (42), such as an opening, co-operating with said dispensing orifice (31) when the dispensing head (30) is in the dispensing position, and making it possible for fluid to be expelled through said dispensing orifice (31), said fluid spray device being characterized in that said dispensing member (20) has an initial dead stroke, actuating of said dispensing member (20) starting only after the dispensing head (30) has travelled over said dead stroke, when the dispensing orifice (31) is situated facing the opening of said passageway means (42) in said closure system (40).

2/ A device according to claim 1, in which said closure system (40) is formed such as to make it possible for the dispensing head (30) to be actuated manually by a user.

3/ A device according to claim 1 or 2, in which the dispensing head (30) is mounted to move axially and the dispensing orifice (31) is directed radially, said closure system (40) being implemented in the form of a hollow sleeve (45) disposed around said dispensing head

CORRECTED SHEET

(30), said hollow sleeve (45) having, on one side, the opening (42) and the closure element (41) disposed above said opening (42), and, on the other side, a cutout through which the dispensing head (30) projects so that
5 it can be actuated by the user.

4/ A device according to any preceding claim, in which, while the dispensing head (30) is returning from its dispensing position to its rest position, after the
10 dispensing member (20) has been actuated, the closure element (41) slides snugly over the zone situated around the dispensing orifice (31), so as to remove any trace of fluid at said dispensing orifice (31) totally.

15 5/ A device according to any preceding claim, in which said closure system (40) is snap-fastened to the neck of the reservoir (10).

CORRECTED SHEET

This translation of an amended page covers the amendments made in the original. However, the page breaks match the translation, so that this page is also a replacement page that fits in with the remainder of the translation.

A B S T R A C T

A FLUID DISPENSER DEVICE HAVING A CLOSURE SYSTEM

5 A fluid dispenser device for dispensing a fluid, the
fluid dispenser device comprising a fluid reservoir (10),
a dispensing member (20), such as a pump, mounted on said
reservoir (10), and a dispensing head (30) provided with
a dispensing orifice (31) and mounted on said dispensing
10 member (20) to move between a rest position and a
dispensing position, said fluid dispenser device being
characterized in that it further comprises a closure
system (40) fixed to said reservoir (10) and comprising a
closure element (41) suitable for closing off the
15 dispensing orifice (31) from the outside when the
dispensing head (30) is in the rest position, said
closure system (40) further comprising passageway means
(42), such as an opening, co-operating with said
dispensing orifice (31) when the dispensing head (30) is
20 in the dispensing position, and making it possible for
fluid to be expelled through said dispensing
orifice (31).

25

30

35 Translation of the title and the abstract as they were when originally filed by the
Applicant. No account has been taken of any changes that may have been made
subsequently by the PCT Authorities acting ex officio, e.g. under PCT Rules 37.2,
38.2, and/or 48.3.

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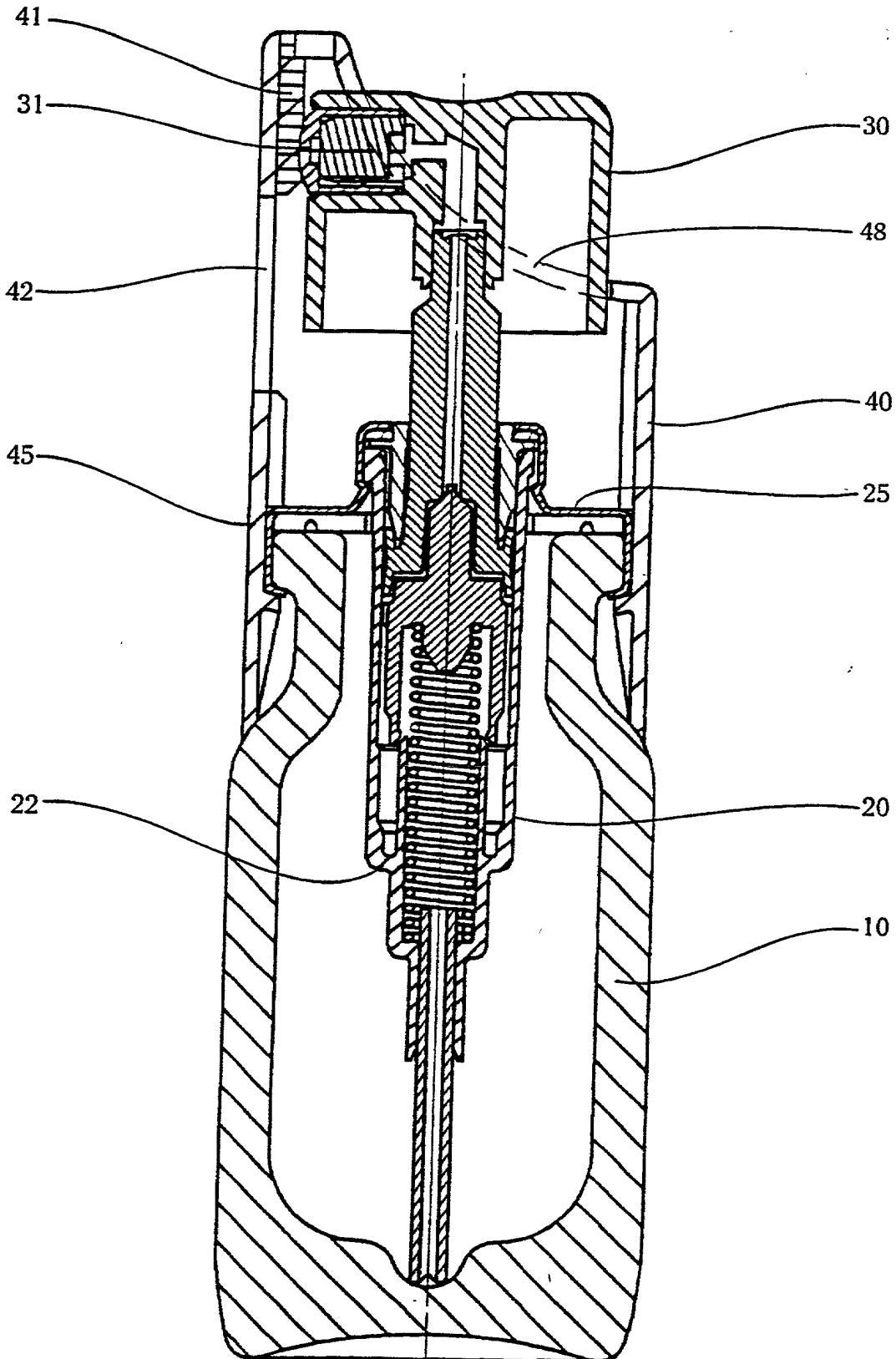


FIG. UNIQUE

Declaration and Power of Attorney for Patent Application

Déclaration et pouvoirs pour demande de brevet

French Language Declaration

En tant que l'inventeur nommé ci-après, je déclare par le présent acte que :

Mon domicile, mon adresse postale et ma nationalité sont ceux figurant ci-dessous à côté de mon nom.

Je crois être le premier inventeur original et unique (si un seul nom est mentionné ci-dessous), ou l'un des premiers co-inventeurs originaux (si plusieurs noms sont mentionnés ci-dessous) de l'objet revendiqué, pour lequel une demande de brevet a été déposée concernant l'invention intitulée

et dont la description est fournie ci-joint à moins que la case suivante n'ait été cochée :

- ☐ a été déposée le _____
sous le numéro de demande des Etats-Unis ou le numéro
de demande international PCT
_____ (n° de confirmation _____)
et modifiée le _____
_____ (le cas échéant).

Je déclare par le présent acte avoir passé en revue et compris le contenu de la description ci-dessus, revendications comprises, telles que modifiées par toute modification dont il aura été fait référence ci-dessus.

Je reconnais devoir divulguer toute information pertinente à la brevetabilité, comme défini dans le Titre 37, § 1.56 du Code fédéral des réglementations.

As a below named inventor, I hereby declare that:

My residence, mailing address and citizenship are as stated next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

A FLUID DISPENSER DEVICE HAVING A CLOSURE

SYSTEM

the specification of which is attached hereto unless the following box is checked:

- ☒ was filed on **July 26, 2000**
as United States Application Number or PCT
International Application Number
PCT/00/02151 (Conf. No. _____)
and was amended on
October 1, 2001 (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56.

French Language Declaration

Je revendique par le présent acte avoir la priorité étrangère, en vertu du Titre 35, § 119(a)-(d) ou § 365(b) du Code des Etats-Unis, sur toute demande étrangère de brevet ou certificat d'inventeur ou, en vertu du Titre 35, § 365(a) du même Code, sur toute demande internationale PCT désignant au moins un pays autre que les Etats-Unis et figurant ci-dessous et, en cochant la case, j'ai aussi indiqué ci-dessous toute demande étrangère de brevet, tout certificat d'inventeur ou toute demande internationale PCT ayant une date de dépôt précédant celle de la demande à propos de laquelle une priorité est revendiquée.

Prior foreign application(s)
Demande(s) de brevet antérieure(s)

<u>99.09798</u>	<u>FR</u>
(Number)	(Country)
(Numéro)	(Pays)

<u> </u>	<u> </u>
(Number)	(Country)
(Numéro)	(Pays)

Je revendique par le présent acte tout bénéfice, en vertu du Titre 35, § 119(e) du Code des Etats-Unis, de toute demande de brevet provisoire effectuée aux Etats-Unis et figurant ci-dessous.

<u> </u>	<u> </u>
(Application No.)	(Filing Date)
(N° de demande)	(Date de dépôt)

<u> </u>	<u> </u>
(Application No.)	(Filing Date)
(N° de demande)	(Date de dépôt)

Je revendique par le présent acte tout bénéfice, en vertu du Titre 35, § 120 du Code des Etats-Unis, de toute demande de brevet effectuée aux Etats-Unis, ou en vertu du Titre 35, § 365(c) du même Code, de toute demande internationale PCT désignant les Etats-Unis et figurant ci-dessous et, dans la mesure où l'objet de chacune des revendications de cette demande de brevet n'est pas divulgué dans la demande antérieure américaine ou internationale PCT, en vertu des dispositions du premier paragraphe du Titre 35, § 112 du Code des Etats-Unis, je reconnais devoir divulguer toute information pertinente à la brevetabilité, comme défini dans le Titre 37, § 1.56 du Code fédéral des réglementations, dont j'ai pu disposer entre la date de dépôt de la demande antérieure et la date de dépôt de la demande nationale ou internationale PCT de la présente demande :

<u> </u>	<u> </u>
(Application No.)	(Filing Date)
(N° de demande)	(Date de dépôt)

<u> </u>	<u> </u>
(Application No.)	(Filing Date)
(N° de demande)	(Date de dépôt)

Je déclare par le présent acte que toute déclaration ci-incluse est, à ma connaissance, véridique et que toute déclaration formulée à partir de renseignements ou de suppositions est tenue pour véridique; et de plus, que toutes ces déclarations ont été formulées en sachant que toute fausse déclaration volontaire ou son équivalent est passible d'une amende ou d'une incarcération, ou des deux, en vertu de la Section 1001 du Titre 18 du Code des Etats-Unis, et que de telles déclarations volontairement fausses risquent de compromettre la validité de la demande de brevet ou du brevet délivré à partir de celle-ci.

I hereby claim foreign priority under Title 35, United States Code, § 119(a)-(d) or § 365(b) of any foreign application(s) for patent or inventor's certificate, or § 365(a) of any PCT International application which designated at least one country other than the United States, listed below, and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or PCT International application having a filing date before that of the application on which priority is claimed.

	Priority Claimed	
<u>Droit de priorité revendiqué</u>		
	Yes/Oui	No/Non

<u>July 28, 1999</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(Day/Month/Year Filed)		
(Jour/Mois/Année de dépôt)		

<u> </u>	<input type="checkbox"/>	<input type="checkbox"/>
(Day/Month/Year Filed)		
(Jour/Mois/Année de dépôt)		

I hereby claim the benefit under Title 35, United States Code, § 119(e) of any United States provisional application(s) listed below.

I hereby claim the benefit under Title 35, United States Code, § 120 of any United States application(s), or § 365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56 which became available between the filing date of the prior application and the national or PCT International filing date of this application.

<u> </u>
(Status: patented, pending, abandoned)
(Statut : breveté, en cours d'examen, abandonné)

<u> </u>
(Status: patented, pending, abandoned)
(Statut : breveté, en cours d'examen, abandonné)

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

French Language Declaration

POUVOIRS : je désigne par les présentes tous avocats de SUGHRUE MION, PLLC énumérés sous le Numéro de Client USPTO figurant ci-après comme mes avocats pour poursuivre la présente procédure et traiter avec l'Office des brevets et des marques (*Patent and Trademark Office*) toute affaire en liaison avec celle-ci, reconnaissant formellement que les avocats spécifiques énumérés sous ce Numéro de Client peuvent être modifiés à tout moment, à la discrétion exclusive de Sughrue Mion, PLLC, et demande que toute correspondance relative à la demande soit adressée à l'adresse mentionnée sous le même Numéro USPTO.

POWER OF ATTORNEY: I hereby appoint all attorneys of SUGHRUE MION, PLLC who are listed under the USPTO Customer Number shown below as my attorneys to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith, recognizing that the specific attorneys listed under that Customer Number may be changed from time to time at the sole discretion of Sughrue Mion, PLLC, and request that all correspondence about the application be addressed to the address filed under the same USPTO Customer Number.

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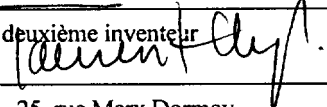
PATENT TRADEMARK OFFICE

Adresser tout appel téléphonique à : (nom et numéro de téléphone)

SUGHRUE MION, PLLC
+1 (202) 293-7060

Direct Telephone Calls to: (name and telephone number)

SUGHRUE MION, PLLC
+1 (202) 293-7060

Nom complet de l'unique ou premier inventeur Ludovic PETIT	Full name of sole or first inventor
Signature de l'inventeur 	Inventor's signature
Date 23/01/02	Date
Domicile 4, rue du Buc 27110 VITOT FRANCE FRX	Residence
Nationalité FRANCAISE	Citizenship
Adresse postale Same as domicile	Mailing Address
Nom complet du deuxième co-inventeur, le cas échéant Laurent ARGHYRIS	Full name of second joint inventor, if any
Signature du deuxième inventeur 	Second inventor's signature
Date 23/01/02	Date
Domicile 25, rue Marx Dormoy 76300 SOTTEVILLE-LES-ROUEN FRANCE FRX	Residence
Nationalité FRANCAISE	Citizenship
Adresse postale Same as domicile	Mailing Address